

One larva had the antennal hair double on each side, and another had one of the dorsal anterior head-hairs, which are normally double, fused at the base distally to half its length.

NOTES ON THE SPECIES

In October 1951 the writer collected larvae and pupae from a hole in a tree stump about five feet from the ground, in a clearing at the edge of a forest near Arenal, San Carlos Province, Costa Rica. The adults reared from the larvae and pupae were *H. iridicolor*. Yellow fever had caused deaths in the vicinity of this collecting site in the immediate past. Because of its distribution in northwestern Panama and in Costa Rica, in areas where jungle yellow fever had occurred during the past few years, *H. iridicolor* may be a vector of this disease.

REFERENCES

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A REDEFINITION OF THE GENUS *ZATROPIS*, WITH DESCRIPTIONS OF THREE NEW SPECIES

(HYMENOPTERA, PTEROMALIDAE)

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Dr. W. V. Balduf of the University of Illinois has for several years been rearing the insects associated with the hips of wild roses. In this work he has secured many specimens of an undescribed species of the genus *Zatropis*. He has requested that this species be described so that its name will be available for use in his publications on the biologies of rose-hip insects. Accordingly, it is herewith described, along with two other species that have remained unnamed for several years in the U. S. National Museum collection. A redefinition of the genus *Zatropis* itself and the transfer of one species from another genus to *Zatropis* are also included in this paper.

Genus *Zatropis* Crawford

Zatropis Crawford, 1908, Proc. Ent. Soc. Wash. 9: 159. Kurdjumov, 1913, Rev. Russe d'Ent. (Ent. Obozr.) 13:6. Girault, 1916, Ent. News 27:403. Crawford, 1921, Proc. Ent. Soc. Wash. 23:171. Gahan and Fagan, 1923, U. S. Natl. Mus. Bul. 124, p. 155. Peck in Muesebeck and others, 1951, U. S. Dept. Agr. Monog. 2, p. 558.

Type: *Zatropis catalpae* Crawford; monobasic.

Generic description.—Each mandible with 4 teeth, ventral tooth long, slender, and acute at tip, 2 intermediate teeth shorter and rather blunt at apices, dorsal tooth truncate, broad, and slightly shorter than intermediate teeth; genae at bases of mandibles slightly flattened, but not excavated; antenna with 3 ring segments and 5 funicle segments, club not pointed at apex; fore wing with marginal vein relatively slender, an asetose area behind marginal vein on dorsal side, and, on ventral side of wing, 1 or 2 rows of bristles parallel with marginal vein; parapsidal grooves of praescutum incomplete; hind tibia with one apical spur; propodeum with median carina, lateral folds, and without neck or with an obscure one; gaster sessile, narrower than thorax, and longer than head and thorax combined.

This genus, like the others in the tribe Pteromalini, is characterized from the females only.

Girault (1916) was of the opinion that *Zatropis* was a synonym of the genus *Neocatolaccus* Ashmead. That clearly is not true, as the two have been correctly referred to different tribes of the Pteromalinae (see Peck, 1951). *Zatropis*, having 1 apical spur on each hind tibia, is placed in the Pteromalini, while *Neocatolaccus*, having 2 apical spurs on each hind tibia, is referred to the Metastenini.

The species of *Zatropis* are all, so far as is known, primary parasites. They attack the larvae of weevils, bruchids, or gall-making ecidomyiids, except for *tortricidis* Crawford, which parasitizes Microlepidoptera belonging to several families.

Zatropis rosaecolis, new species

Female.—Length 2.0-4.0 mm. Head and body black with faint blue-green or blue metallic coloration visible from oblique angles; antennal scape yellow or tan, shading to dark brown at apex, flagellum very dark brown or black; tegulae and wing veins light brown; coxae black, femora very dark brown with apices yellow, each tibia yellow at base and apex, shaded with brown in the middle.

Face clothed with numerous short hairs; mesal side of apical half of each antennal scape clothed with numerous short, silvery hairs, antennae inserted slightly below center of face; relative lengths of parts of antenna: scape 48, pedicel 15, ring segments 2, 3, 4, funicle segments 14, 12, 12, 10, 10, club 26; height of compound eye twice as great as

width of malar space; median length of head from dorsal aspect one-third as great as maximum width of head; postocellar line one and one-fourth times as long as ocellular.

Thoracic dorsum with a few scattered, golden-yellow hairs; mesepimeral ridge with a single row of short hair; each hind coxa bearing 6 to 8 long setae on the dorso-mesal margin; pronotum the same length at dorsal meson as at dorso-lateral margins; mesoscutum twice as wide as long, and equal in length to mesoscutellum; 2 slightly irregular rows of bristles on ventral side of fore wing behind marginal vein, submarginal vein twice as long as marginal, stigmal one-half as long as marginal; postmarginal slightly shorter than marginal.

Propodeum with continuous lateral folds, area between folds strongly shagreened, small neck present at apex of propodeum, median carina slightly irregular, a pair of oblique carinae extending from middle of median carina to mid point of either lateral fold; a deep pit situated at anterior end of each lateral fold and another just posterior to point where oblique carina intersects lateral fold; spiracle elongate-oval, separated from anterior propodeal margin by a space one-half as great as length of spiracle itself; 8 to 10 long hairs present at either lateral margin of propodeum; gaster with first 3 segments emarginate at meson of posterior margin, apical 4 segments bearing short setae dorsally, all gastral segments bearing dorsolateral patches of setae; gaster one and one-quarter times as long as head and thorax combined.

Male.—Length 1.5-2.0 mm. Color of head and thorax black without metallic sheen, gaster dark brown, basal segment with faint blue or blue-green metallic luster; antenna entirely black or very dark brown, only 2 ring segments present; relative proportions of parts of antenna: scape 30, pedicel 10, ring segments 1, 1, funicle segments 7, 8, 8, 8, 8, club 22; apical six segments of gaster setose, gaster slightly shorter than head and thorax combined.

Type locality.—Urbana, Ill.

Types.—U. S. N. M. No. 61977.

Described from 33 ♀ and 3 ♂ specimens, all reared by Dr. W. V. Balduf from wild rose hips: holotype ♀, allotype ♂, and 5 ♀ and 1 ♂ paratypes, Urbana, Illinois, Aug. 18, 1947-July 27, 1948, from *Rosa carolina*; 1 ♀ paratype, Urbana, Ill., May 28, 1943, from *Rosa rugosa*; 1 ♀ paratype, Velma, Illinois, June 29, 1948, from *Rosa carolina villosa*; 1 ♀ paratype, Taylorville, Ill., June 24, 1946, from *Rosa rugosa*; 1 ♀ paratype, Onarga, Ill., June 26, 1945, from *Rosa rugosa*; 1 ♂ and 1 ♀ paratypes, Mayview, Ill., June 27, 1949, from *Rosa carolina*; 10 ♀ and 1 ♂ paratypes, San Jose, Ill., Aug. 1-Sept. 11, 1951, from *Rosa carolina*; 1 ♀ paratype, Philo, Ill., Sept. 9, 1948, from *Rosa carolina*; 1 ♀ paratype, Madison, Wis., July 2, 1947, from *Rosa arkansana*; 9 ♀ paratypes, Chetek, Wis., Sept. 19, 1948-Sept. 20, 1951, from

Rosa blanda or *carolina*; 1 ♀ paratype, Solon Springs, Wis., June 13, 1947, from *Rosa* sp.; 4 ♂ paratypes, U. S. Rt. 61 at Pike Lake Rd., Minn., Aug. 27, 1947, from *Rosa acicularis bourgeauiana*.

Host.—This species is a primary external parasite of the larva of the rose curculio, *Rhynchites bicolor* (Fab.), which develops in rose hips. This information was furnished in correspondence by Dr. Balduf.

This species differs from all other North American species of *Zatropis* in having the face clothed with simple hair, rather than flattened hair as in *bruchivorus* (Ashmead), or spatulate-acuminate scales as in *nigroaeneus* (Ashmead). *Z. rosae* is also the only North American species of the genus which has 2 rows of bristles behind the marginal vein on the underside of the forewing.

Zatropis chalcis, new species

Female.—Length, 1.5-2.2 mm. Head coppery-red or bronze colored, shading to metallic green on the vertex and eye margins; antennal scape and pedicel yellow, flagellum tan; thorax coppery-red dorsally with a suggestion of metallic green along sutures; wing veins yellow; all coxae brown with faint metallic green iridescence, legs otherwise yellow; propodeum dark bronze-brown; gaster brown with faint bronzy iridescence; silvery hairs and scales clothing head, body and legs.

Head clothed with spatulate-acuminate scales; antennae inserted in center of face; relative lengths of parts of antenna: scape 44, pedicel 14, ring segments 2, 2, 3, funicle segments 10, 10, 10, 9, 9, club 24; height of compound eye slightly more than twice as great as width of malar space; occiput excavated and relatively narrow, lateral ocelli almost touching occipital margin and median length of head only one-fourth as great as width of head; postocellar line two and three-fourths times as long as ocellular.

Thoracic dorsum clothed with spatulate-acuminate scales, and a closely set row of these scales borne on mesepimeral ridge, with a tuft of these scales just ventral to tegula; coxae with sparse, long hair; pronotum at meson one-eighth as long as mesoscutum, the latter one and one-fifth times as long as mesoscutellum, mesoscutum one and three-fourths times as wide as long; marginal vein of fore wing twice as long as post-marginal, two and one-half times as long as stigmal, and three-fourths as long as submarginal; a single row of four to six bristles on ventral side of fore wing behind marginal vein.

Surface of propodeum between lateral folds shagreened, median length of propodeum one-third as great as length of mesoscutellum, median propodeal carina strong, lateral folds complete and arcuate, six to eight scale-like hairs at either posterolateral angle of propodeum; propodeum entirely without neck; gaster clothed laterally with slightly flattened hairs and as long as head and thorax combined.

Male.—Length, 1.2-1.8 mm. Thoracic dorsum almost black, coppery-red color very faint, gaster with a vague yellow spot near base, color otherwise as in female; gaster two-thirds as long as head and thorax combined.

Type locality.—Miami, Florida.

Types.—U. S. N. M. No. 62304.

Described from 32 ♀ and 14 ♂ specimens as follows: holotype ♀, allotype ♂, and 11 ♀ and 4 ♂ paratypes, reared from cotton bolls, Dec. 5, 1932, C. F. Rainwater; 1 ♀ paratype, Flagler Co., Fla., Dec. 28, 1929, taken in Florida Fruit Fly Survey, D. B. Webb; 13 ♀ and 6 ♂ paratypes, Long Key, Fla., reared from cotton blossoms, Oct. 1, 1932, C. F. Rainwater; 1 ♀ paratype, Key Largo, Fla., reared from wild cotton boll, May 8, 1933, C. F. Rainwater; 1 ♀ paratype, Grassy Key, Fla., Dec. 30, 1932, reared from wild cotton boll, C. F. Rainwater, 2 ♂ paratypes, Miami, Fla., Dec. 12, 1932, reared from cotton bolls, C. F. Rainwater; 1 ♀ paratype, Key West, Fla., Dec. 29, 1952, H. V. Weems; 1 ♀ paratype, Summerville, S. Car., July 1921, ex *Anthonomus grandis*, C. B. Nickels; 1 ♀ paratype, Dunedin, Fla., Apr. 18, 1930, L. J. Bottimer.

Hosts.—This species is said to be a parasite of the cotton boll weevil, *Anthonomus grandis* Boh., and it might also parasitize the wild cotton boll weevil, *A. thurberiae* Pierce. Mr. Rainwater, however, was of the opinion that it was parasitic on the cotton flower bud maggot, *Contarinia gossypii* Felt, when he reared the specimens which are listed above from Miami, Florida, and the Florida Keys.

This species closely resembles *nigroaeneus* (Ashmead) in having the head and thoracic notum clothed with spatulate-acuminate scales and the first funicle segment as long as wide; the thoracic notum of *chalcis*, however, is coppery-red in color, rather than black as in *nigroaeneus*, and the propodeum of *chalcis* entirely lacks an apical neck, while *nigroaeneus* has a small one.

Zatropis capitis, new species

Female.—Length 1.2-2.0 mm. Head dark metallic green, antennae light brown, scapes yellow at bases; thorax black with faint iridescent green luster, legs mostly red-brown, light tan at apices of femora, bases and apices of tibiae, and on basal four segments of each tarsus, tegulae and wing veins yellow-brown; propodeum dark metallic green, gaster red-brown with faint metallic green or blue sheen.

Face clothed with short, very inconspicuous, silvery hair; antennae inserted slightly below center of face, relative lengths of parts of antenna: scape 40, pedicel 14, ring segments 1.5, 1.5, 2, funicle segments

6, 8, 8, 8, 8, club 24; width of malar space one-half as great as height of compound eye; occiput only slightly excavated—median length of head one-third as great as its width, lateral ocellus located more than its diameter forward of occipital margin; postocellar line two and one-half times as long as ocellocular.

Thoracic dorsum with a few, scattered, golden-yellow hairs, mesepimeral ridge bearing 3 or 4 hairs, hind coxa bearing 5 to 7 long hairs on its inner dorsal angle and having one row of shorter hairs along outer dorsal margin; pronotum two-thirds as long on meson as at lateral margins; scutum almost twice as long, scutellum as long as scutum; marginal vein of fore wing three-fifths as long as submarginal, stigmal vein slightly more than one-half as long as marginal; postmarginal vein five-sixths as long as marginal; a single, slightly irregular row of bristles on ventral side of wing behind marginal vein, this row composed of 10-12 bristles.

Surface of propodeum between lateral folds faintly sculptured, almost smooth, median length of propodeum two-fifths as great as length of scutellum, median carina strong, lateral folds complete, arcuate, a deep pit at posterior end of each, and a depression at anterior end of each fold; spiracle almost touching anterior margin of propodeum, a tuft of long hair at each lateral margin of propodeum; gaster clothed laterally with short, inconspicuous hair, gaster one and one-third times as long as head and thorax combined.

Male.—Length 1.2-1.8 mm. Head and thorax bright, metallic green, antennae tan with base of scape and apex of pedicel yellow; row of bristles on ventral side of wing behind marginal vein composed of 6 to 8 bristles; gaster slightly shorter than head and thorax combined.

Variation.—The smallest specimens of this species have the first funicle segment of the antenna proportionately shorter than it is in the largest specimens.

Type locality.—Reno, Nevada.

Types.—U. S. N. M. No. 62305.

Described from 17 ♀ and 12 ♂ specimens as follows: Holotype ♀, allotype ♂, and 8 ♀ and 11 ♂ paratypes reared from undetermined galls on *Chrysothamnus*, 1936-1937, Ira La Rivers; 2 ♀ paratypes, Ft. Duchesne, Utah, May 6, 1933, collected on *Chrysothamnus*, G. F. Knowlton; 3 ♀ paratypes, Tamalpais, Calif., Dec. 1927, from cecidomyiid gall on *Baccharis pilularis*; 3 ♀ paratypes, Crater Lake National Park, Oreg., Aug. 4-Sept. 1, 1930, H. A. Scullen.

Hosts.—This species may be parasitic on species of *Rhopalomyia*, cecidomyiid gall makers on *Chrysothamnus* and *Baccharis*.

Z. capitis agrees with *Z. incertus* (Ashmead) and *bruchivorus* in having the head and thoracic notum clothed with flattened hair, rather than simple hair or scales; *capitis*, how-

ever, has the lateral propodeal folds complete, rather than being interrupted in the middle as in *incertus* and *bruchivorus*.

Zatropis albiclavus (Girault), new combination

Eurydinoteloides albiclavus Girault, 1917, Chalc. Nov. Maryland., pt. 3, p. 5. Peck in Muesebeck and others, 1951, U. S. Dept. Agr. Monog. 2, p. 566 (*albiclava*).

Type.—U. S. N. M. No. 21465.

This species is known from New York, Maryland, and Ohio; it has been reared from the gall of an undetermined midge.

CHARLES LESTER MARLATT

1863-1954



On the morning of March 3, 1954, Dr. Marlatt, the last of the Society's "Old Guard," passed on after a long, useful and adventurous career. The part that he played in the development of economic entomology and plant quarantine in this country will remain as a lasting monument to his forceful character.